INTRODUCTION

The global economy today appreciates the oceans and coastal resources for their contributions toward the creation of growth, innovation, and sustainability. As the world gears toward sustainable development, a new concept has emerged: "Blue Economy," which signifies a new transformation for ensuring ecologically balanced as well as effective and sustainable use of marine resources. India has a coastline of more than 7,500 kilometres; thus, it stands to gain from the potential of the Blue Economy. Vast oceanic resources within the country can serve as an impetus for economic growth in fisheries, aquaculture, shipping, tourism, offshore energy, and coastal infrastructure development.

Indulging all these resources requires proper planning and management to achieve a sustainable balance between economic interests and environmental protection. This is where the importance of Marine Spatial Planning (MSP) comes in handy. A holistic and integrated approach using which the utilization of the marine space is managed, keeping in mind that multiple marine activities can exist side by side in contributing to the long-term sustainability of marine areas, is called marine spatial planning. It can act as a much-needed engine of growth for the Indian Blue Economy by optimizing allocation and use of marine resources, minimizing conflicts between different sectors, and enhancing investments in Blue Economy activities within ecological limits.

This paper will attempt to look at how Marine Spatial Planning can assist in attracting sustainable investment for India's Blue Economy through a sectoral approach to interesting potential benefits and challenges. It will also look into how MSP could enable a balanced development of some important maritime sectors with respect to the increasing threats of depletion, degradation of the environment, and climate change-induced effects. We should analyze how MSP can facilitate the balanced development of key maritime sectors. It can do that through the alleviation of the growing concerns overexploitation, environmental degradation, and the impacts of climate change. Through synergy evaluation, we will be able to discuss how MSP and investment could comprise a comprehensive framework that strengthens economically reasonable growth without impairing marine ecosystem health.

Concept of Blue Economy

It is the sustainable use of ocean resources for economic growth, for better livelihoods, and jobs while maintaining the health of ocean ecosystems. In short, it is an approach towards responsible stewardship of both marine and coastal environments and appreciating the economic growth possibilities from those sectors reliant on the sea such as fisheries, marine transport, offshore energy, and coastal tourism. The Blue Economy model talks about a need to achieve a balance between economic development and the preservation of marine resources to prevent depletion of ocean ecosystems.

Given India is dependent on ocean resources, the Blue Economy is increasingly relevant there. Indeed, the ocean plays an important part in the economy in terms of helping make a living through fishing and aquaculture, contributing to two important industries--shipping and tourism. India's offshore energy sectors, including wind and solar, have developed significantly and positioned India as a leader in the global renewable energy space.

Although the immense promise of the marine ecosystem is likely to bring growth to the economy of India, this very ecosystem faces, unfortunately, a lot of disturbance these days. The factors of overfishing and pollution as well as the destruction or degradation of coastal habitat and the effects of climate change are proving to be serious threats to the sustainability of taking up marine resources in India. These are the compelling reasons why India must devise methods to ensure the long-term health sustenance of its Blue Economy sectors and, at the same time, ensure the health and vitality of the marine ecosystems.

Marine Spatial Planning (MSP)

Marine Spatial Planning is an integrated and proactive approach for managing ocean and coastal areas. It is spatially explicit and considers the interactions between different sectors that use marine resources. These sectors include fisheries, shipping, tourism, and offshore energy production. The intent of MSP is to allocate space for different uses in ways that minimize conflicts, maximize benefits to be derived from the ocean's resources, and ensure sustainable practices.

MSP plays an important role in ensuring the objectives of the Blue Economy because it allows better-informed decision-making and planning. Its use of mapping and designation by use prevents concentration of activity in over one area, leading to depletion of resources and environmental degradation. MSP helps identify areas appropriate for offshore wind farms without conflicting with designated fishing grounds or marine protected areas. MSP also reduces the footprint of human activity on marine biodiversity, ensuring that economic growth does not come at the expense of the environment.

MSP can also address sectoral challenges of the Blue Economy in India. For example, increased action by the shipping industry needs better management of traffic along coastal waters to prevent collisions and minimize harm to the environment. In aquaculture and renewed renewable energy sector development, careful spatial planning would be required so as not to conflict with traditional marine uses and conservation interests. Finally, the foundation for a marine

conservation strategy could be laid through MSP, establishing protected areas and ensuring sustainably managed marine biodiversity.

Sectoral Approach towards Identifying Sustainable Investment

There are many facets of the Blue Economy in India, the essence of which would be understood through the successful management and regulation of these various maritime sectors. Some of these sectors are:

Fisheries and Aquaculture: This sector of fisheries is of great significance to the economy of India as it can feed millions of people. It is one of the important sources of employment and food security to millions of people. Along with this, unsustainable fishing practices led toward the overexploitation of marine resources. MSP would benefit the fisheries sector in resource allocation, sustainable fishing zones, and fewer conflicts with other marine industries. Aquaculture is also an area that can be strategically planned without causing damage to sensitive ecosystems, such as mangroves and coral reefs.

Shipping and Maritime Transport: India stands as one of the largest maritime nations of the world, and naturally, most people would consider its economy's interdependence on trade and transportation within the shipping sector. MSP could be an important tool in managing shipping routes to ensure safe travel and control congestion in coastal waters. The related delivery of mitigation of environment impact by shipping is thus identifying areas that could be considered for eco-friendly shipping lanes or possibly employing other green technologies to reduce emission from this mode of transportation.

Offshore Energy: Offshore energy, especially in the case of winds and solar, provides a large window of opportunity in energy diversification for India, supporting its missions in achieving the renewable energy goals. MSP will help site offshore wind farms so as not to conflict with other uses, such as fishing or shipping activities. Plan strategically energy infrastructure flowing into investments but not having a negative impact on the marine environment.

Tourism and Coastal Development: The coast is becoming the growing sector of coastal tourism for India, which does not come without the price of risking marine habitat destruction, pollution, and overdevelopment. MSP would allow the identification of such areas as sustainable tourism zones and securing sensitive coastal areas from the invasion by tourism development instead ensuring the tourism development process is along with environmental goals. Unlike other beaches and areas of India, a lot of coastal development could be planned while accommodating what infrastructure needs attached to it are in values of the natural aesthetic beauty that most of India's coastal amount to hold.

Marine Conservation: Marine ecosystems, particularly coral reefs, mangroves, and seagrasses, contribute to biodiversity conservation and livelihoods. MERND has become the critical tool for marine conservation in terms of establishing protected areas, preventing overexploitation, and conserving those that contribute to the overall health of the Blue economy.

REVIEW OF LITARATURE

- **Antaya March, Tegan Evans, Stuart Laing and Jeremy Raguain (2024)** : This study evaluates of Seychelles' sovereign blue bond, which was co-developed by the government of Seychelles and the World Bank. Three themes are explored, how the blue bond relates to other actors and donors in the blue economy space of Seychelles; how the blue bond contributes to advancing the national agenda and blue economy of Seychelles; and the key strengths, enablers and weaknesses of the blue bond. A series of considerations for future blue financing and blue bond mechanisms are presented, based on the findings of this study, to ensure that financing extends beyond blue washing and contributes meaningfully to the holistic transition to a sustainable blue economy. Our findings imply significant considerations for stakeholders in sustainable finance, suggesting ways to enhance the efficacy of blue bonds and emphasising the need for further research on their long-term impact and integration with other financial instruments.
- **Magdalena Ziolo1 , Diana Mihaela Tirca and Isabel Novo-Corti (2024)** : This paper aim the preservation of the planet and the appropriate use of its resources is intrinsically linked to the sea, and it is not for nothing that our home is known as the Blue Planet. The main objectives of this Research Topic are focusing in particular on the blue economy and its links to sustainable development and the SDGs in general and to those related to the financial framework in particular, as well as outlining the main features of blue economy financing and its potential link to the SDGs.
- **Michael Bennett , Antaya March and Pierre Failler (2024)** : This study reviews various financing solutions available for fisheries and aquaculture development in Caribbean small island developing states (SIDS) and Barbados, Grenada, and St. Vincent and the Grenadines. Previously identified financing needs within the fisheries and aquaculture sectors have been matched with the most suitable financing mechanisms. However, the use of blue levies is recommended and applicable in almost every scenario, as they allow these sectors to drive their own development in financing research and conservation projects to their own benefit. The use of "blue tokens" with sufficiently low repayment coupons allows development projects to gather

public support for fisheries, thereby increasing the likelihood of the project being successful through community buy-in. The possibility of natural capital being traded as public equities as "Natural Asset Companies" provides the opportunity for development projects to fund themselves.

- **Md. Atiqul Islam Mondal, Lirong Yu Abit, Abdullah Al Mamun Siddiqui and Abdulla-Al-Asif (2024)** : This comprehensive review explores the rich tapestry of Bangladesh's maritime journey. Commencing with a historical lens, it traces the nation's roots in fisheries, showcasing its transformation into a diversified and dynamic Blue Economy. The significance of this transition unfolds across the review, underscoring the sector's contributions to GDP, employment, and food security, while candidly addressing challenges such as overfishing and environmental impact. The review also champions environmental sustainability, highlighting the impact of Blue Economy activities on marine ecosystems and advocating for conservation measures, thus positioning Bangladesh as a steward of its rich maritime heritage. Financial mechanisms and investments emerge as pivotal elements, shaping the trajectory of Blue Economy projects, as evidenced by case studies that weave success stories and lessons learned into the narrative. Concluding with a forward-looking perspective, the study identifies emerging trends, growth opportunities, and strategies to tackle challenges, offering a comprehensive roadmap for sustainable development. In weaving together economic vibrancy, environmental stewardship, and future aspirations, this review illuminates Bangladesh's maritime odyssey as a beacon for the global Blue Economy community
- **Andre Standing (2024)**: This brief provides small-scale fishing (SSF) organisations in South Africa with information about several financial instruments gaining international support for ocean conservation. Specifically, it looks at what is taking place in bond markets, including blue and sustainability-linked bonds, as well as debt swaps. Although most people have heard about these instruments, many are unsure how they work and their implications. This is unsurprising. Most of us need to be more knowledgeable about global finance and bond markets. However, the financial industry's tendency to use complex jargon is often deliberately designed to confuse and avoid scrutiny of what is taking place. Therefore, people from SSF communities must have access to jargon-free information about these financial instruments to equip them with the knowledge to engage in debates about their use.
- **Marleen Simone Schutter, Andre' s Cisneros-Montemayor, Michelle Voyer, Edward Hugh Allison, Calvin Domarchuk-White, Dominique Benzaken, Essam Yassin Mohamme (2024)**: This article overviews the importance of adequate investment for achieving Sustainable Development Goals in the oceans has been championed, it is unclear what funding is currently available. We find that money flows in the blue economy are unevenly distributed across regions and industries, and potentially negative social equity impacts are prevalent. There is a disconnect between aims and actions in the blue economy, posing challenges for furthering economic development in the oceans that simultaneously promotes environmental sustainability and social equity
- **Michael Karikari Appiah, Elikplim Ameko, Theodora Akweley Asiamah & Rahmat Quaigrane Duker (2023)** :This paper aims to develop an integrative model to enhance BEI through Sustainable Supply Chain Performance (SSCP) by integrating competing theories to attract sustainable investment to conserve and make sustainable use of marine resources. We anchored our study on quantitative research approach and a cross-sectional survey data. Our hypotheses have been tested using variance-based Structural Equation Modeling and SMART-PLS version 3.3.1. The study has revealed that organisational factors, technological factors, supply chain risk, green environmental awareness, perceived cost and regulatory environment are significant determinants of BEI. Moreover, BEI significantly drives SSCP. Again, BEI significantly mediates the relation between its determinants and SSCP. The implications include the emergence of an integrated model which could be used to improve marine resources investment and the realisation of Sustainable Development Goals.
- **J. Sneha Jayalakshmi, Dr. M. Sumathy (2023)**: This article studies blue economy has a comprehensive and ground-breaking strategy for sustainable development that places a strong emphasis on the wise use and conservation of maritime resources. In relation to oceans and coastal areas, it aims to achieve a balance between social justice, environmental preservation and economic prosperity. However, realizing the full potential of the blue economy requires a concerted effort to ensure the sustainable use of marine resources. This is where blue finance and ocean governance come into play
- **Marwan Youssef (2023)** : This article overviews the blue economy, its origins, dimensions, and its impact on the global economy. The blue economy is a concept that promotes the sustainable use of ocean resources for economic growth while also preserving the health of marine ecosystems. The chapter discusses the different dimensions of the blue economy, including marine transportation, fisheries, energy, tourism, and biotechnology. It highlights the significant contribution of the blue economy to the world economy, creating jobs,

generating wealth, and supporting livelihoods. However, the chapter also highlights the challenges facing the blue economy, such as overfishing, pollution, and climate change, which threaten the health and sustainability of the marine environment. The chapter concludes by calling for greater cooperation and investment in research, innovation, and technology to address these challenges and ensure the long-term sustainability of the blue economy

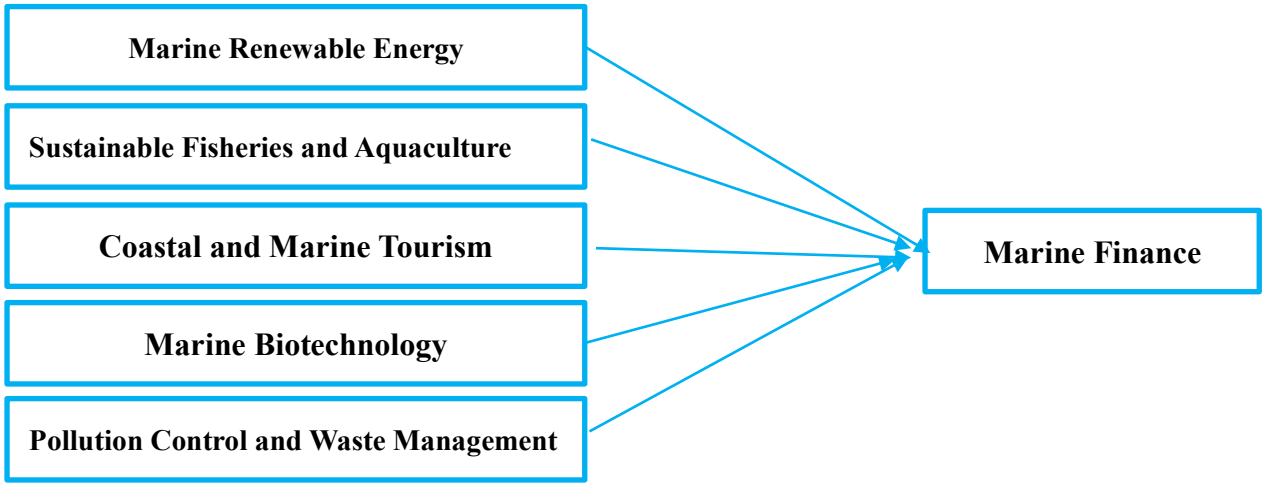
- **Michael C. Huang and Peter J. Morgan. Posted (2022):** The article highlights the importance of effective governance structures, innovative financing schemes, and international partnerships in promoting sustainable ocean development. Further research is necessary to address existing gaps and support the development of a vibrant blue economy in Asia and the Pacific.
- **Peter J. Morgan, Michael C. Huang, Michelle Voyer, Dominique Benzaken, and Atsushi Watanabe (2022)** : This book addresses crucial and timely issues related to promoting sustainable ocean and coastal development and management in Asia and the Pacific with evidence-based approaches. To tackle these ocean related issues with intensive discussion among public and private stakeholders and academia, the Australian National Centre for Ocean Resources and Security of the University of Wollongong, the Ocean Policy Research Institute of the Sasakawa Peace Foundation, the Ocean Affairs Council, and the Asian Development Bank Institute co-hosted an international conference in November 2020. The chapters of this book, first presented at the conference, include analyses of Bangladesh, Cambodia, the People's Republic of China, Fiji, India, Indonesia, Japan, the Philippines, and Sri Lanka.
- **Nagisa Shiiba, Hsing Hao Wu, Michael C. Huang (2022)**: This article provides a conceptual understanding of this emerging concept and explores the potential of using legal and institutional mechanisms to increase investment in ocean development programs. By reviewing existing blue financing practices and identifying opportunities and challenges, we find the significant challenge is to develop connections between all stakeholders to illustrate potential incentives for increasing private investment and public donations. As such, we propose a regulatory-driven financing mechanism incorporating the core concepts of blue finance in the context of marine governance, both at the international and domestic levels. Our proposed approach would boost blue financing by seeking a balance between economic growth and ocean sustainability.
- **Kotaro Tanaka a , Mengyao Zhu a , Kohei Miyaji b , Tadayuki Kurokawa b , Tomonari Akamatsu(2022)** : In this study, the existing observation platforms and installed sensors, particularly fixed platforms that enable real-time data transmission, were reviewed, and the spatial distribution of them was investigated. It was confirmed that a large number of observation networks cover Japanese waters; however, many of those platforms were used for single purpose, and the spatial coverage was still considerably limited for some sensors, such as salinity, dissolved oxygen, and chlorophyll a. It must be noted that this study intentionally limited the data sources of platforms/sensors to the disclosed data on public reports and/or websites, in order to raise a discussion about information disclosure of observation efforts, conducted by numerous stakeholders. Based on this information, we recommend extending the capacity of ocean observation by utilizing existing platforms rather than constructing new platforms, in order to enhance cost-effectiveness.
- **Rosa María , Martínez-Vázquez , Juan Milán-García and Jaime de Pablo Valenciano (2021)** : This article undertakes a bibliometric analy- sis in the terms of Blue Economy (BE), Maritime Economy (MAE), Ocean Economy (OE), Marine Economy (ME), and Blue Growth (BG) to analyze the scientifc production of this feld of study. Analysis of the authors' defnitions of BE, BG, ME and OE provides interesting relationships divided into sustainability and governance; economics and ecosystem protection; industrial development and localization; and the growth of the ocean economy, with development as the central axis that encompasses them. The main contribution is to fnd out if there is a link between the BE and the CE through the keyword study
- **Mariana Graciosa Pereira 1 Jorge Madeira Nogueira(2021)** : This study contemplates the carrying out of economic activities based upon the oceans in a sustainable way, ensuring economic efficiency, with social inclusion and the maintenance of the health of the coastal and marine ecosystems. Nevertheless, the transi- tion to the Blue Economy requires funding contributions, included into the Blue Finance. Under this perspective, different actions in sectors of the ocean-based economy require investments. They will vary from alternatives pri- marily aimed at environmental and social outcomes to those directed to an environmental performance combi- ned with financial returns. In order to guide the allo- cation of resources under the Blue Finance, a series of principles have been developed to motivate investors to support projects suitable for a Blue Economy perspective. However, there is a limited number of studies evaluating these principles and actual experiments of Blue Finance. This paper contributes to reduce this gap in current knowledge, highlighting potentiality and

constraints of alternatives financial instruments. Our analysis shows that we still have a long journey towards the establishment of a solid Blue Finance arrangement towards a sustainable use of our oceans.

- **Alex Midlen (2021)** : . This review of published empirical case studies initiates a conversation between governmentality concepts and place-space–time theory, aiming to open new lines of enquiry regarding the influence of spatiality on the nature of governance. This approach has allowed the elucidation of a complex and nuanced understanding of the Blue Economy, complementing earlier discourse and content analyses. In relation to Blue Economy governance, I pose the specific question, "Does place matter?", leading to an interrogation of material and spatial relations in Blue Economy governance. I describe a complex spatialised governmentality, dominated by growth-based imaginaries and market-led practices. I draw attention to the production of ocean space through socio-material Blue Economy relations and the material and spatial contingency of its governance. Finally, I draw a distinction between "place" and "location" which has important consequences for Blue Economy
- **Sakhuja Vijay & Narula Kapil (2020)** : This book is a collection of short essays articles on the multidimensional aspects of the blue economy. It presents perspectives on the concept and the essential ingredients of the blue economy such as marine resources, maritime infrastructure and marine environment. International cooperative approaches to promote blue economy, the role of maritime governance and capacity building 16 are discussed in the context of implementing the blue economy. The book also promotes the importance of sustainable utilization of the oceans which lies at the core of the blue economy.
- **Abdullahel Bari PhD, C Eng, FIEB, FRINA (2017)** : This paper is a compilation of researches already carried out in the region by extracting the data and works which are available somehow related to the topic and relevant to thoughts and activities in this region. The paper cites a few highlights on how the Blue Economy Concept fits into the sustainability development framework while balancing its economic, social and environmental benefits and how does it contribute in GDP. The paper aims at generating thoughts and actions towards investigating various opportunities of the Blue Economy, ways of cashing the benefits as well as identifying challenges and ways of overcoming them.
- **Sakhuja Vijay & Narula Kapil (2016)**:This book presents the essential ingredients of the Blue Economy and discusses its various components. The role of sustainable development of fisheries, renewable ocean energy, marine leisure industry, maritime infrastructure and deep seabed mining in promoting the Blue Economy are presented. The book deliberates on the mechanisms of the implementation of the Blue Economy from global, regional and country specific perspectives. It also examines various enablers of the Blue Economy such as maritime security, maritime administration, financing and the role of entrepreneurship in the development of the Blue Economy.
- **Tanaka Yoshifumi (2015)** : This book is a well written text and commentary on the Law of the Sea Convention 1982.The law of the sea is a complex and fascinating subject. This textbook explores the subject from the perspective of public international law, covering all the key topics from the legal regimes governing the different jurisdictional zones, to international co-operation for protection of the marine environment. The chapters on emerging issues such as the conservation and the protection of natural resources and biodiversity in the oceans are well analysed. In fact, this book deals in vivid details every aspect of the law of the sea providing a clear insight and interpretation of the various aspects of the convention. The analyses is supported by various judgments of the ICJ and ITLOS to add credence to the authors conclusions.
- **Brian Clark Howard (2017)** : The study delves into the role that stakeholders play in the development of blue growth. Sustainable development is often looked at as a scientific or a political problem, but stakeholders also have a huge role to play. The actions of stakeholders have the possibility to make or break the goals set out by the UN and other international bodies when it comes to sustainability. Here Howard interviews a number of important actors about how they think we can work together to achieve a blue economy

RESEARCH METHODOLOGY

- **Conceptual Model**



- **Statement of the Problem**

The problem addressed in this research is the limited understanding of how various factors influence investment behaviors in the blue economy and their subsequent impact on the sustainability of the financial sector in coastal areas of India. Despite the growing importance of blue economy initiatives, there is a lack of comprehensive insights into how technological factors, organizational capabilities, regulatory environments, supply chain risks, green environmental awareness, and perceived investment costs affect investment decisions. Furthermore, the role of blue economy investment behavior as a mediator in enhancing the sustainability of the financial sector remains underexplored. This gap in knowledge hampers effective policy-making and strategic planning, undermining the potential benefits of blue economy investments for achieving long-term financial sector sustainability. This research seeks to address these gaps by providing a detailed analysis of the determinants of investment behavior and their implications for financial sector sustainability

- **Research Gap**

This creates a significant gap in understanding how regional factors and investment behaviours interplay to enhance the sustainability of the financial sector within this emerging economic sector. Addressing this gap requires a multifaceted approach that considers the interplay between perceived investment costs, supply chain risks, regulatory frameworks, and broader investment behaviours, tailored to the specific context of Telangana's financial and environmental landscape. The social implications of Blue Finance in India and globally are diverse and multifaceted.

- **Objectives of the Study**

1. To identify and analyse the key Sectors influencing investment behaviours in the blue economy in Coastal Areas of India.
2. To assess the supply chain risks associated with blue economy investments and their implications for financial sector sustainability

- **Hypothesis of the Study**

H_1: There is a significant positive relationship between technological factors and blue economy investment behavior.
H_2: Strong organizational factors (such as capabilities, resources, and management practices) are positively associated with blue economy investment behavior.

Sample Size

The sample may not be fully representative of the broader population involved in blue economy investments, affecting the generalizability of the findings.

- **Limitations of the Study**

This study is only confined to the selected commercial banks in Hyderabad region.

ANALYSIS & INTERPRETATION

Reliability Analysis

Reliability is a significant concern when utilizing a psychological test to assess a particular attribute or behavior (Rosenthal and Rosnow, 1991). To comprehend the functioning of a test, it is essential that the test consistently discriminates among individuals at a single point in time or across a duration. Reliability refers to the degree to which measurements yield consistent results across different individuals, occasions, conditions, and instruments designed to measure the same variable. Reliability refers to the consistency of measurement (Bollen, 1989) or the stability of measurement across various conditions,

where similar results should be achieved (Nunnally, 1978).

Variables	Numbers of Items	Cronbach Alpha
Marine Renewable Energy	5	0.845
Sustainable Fisheries and Aquaculture	5	0.835
Coastal and Marine Tourism	5	0.792
Marine Biotechnology	5	0.805
Pollution Control and Waste Management	5	0.828
Marine Finance	5	0.829

Marine Renewable Energy
The scale demonstrates a high degree of internal consistency, evidenced by a Cronbach's alpha of 0.845, which indicates that the items pertaining to marine renewable energy reliably measure a coherent construct.

Sustainable Fisheries and Aquaculture
The scale exhibits strong internal consistency, evidenced by a Cronbach's alpha of 0.835, indicating that the items related to sustainable fisheries and aquaculture reliably measure a unified concept.

Coastal and Marine Tourism
A Cronbach's alpha of 0.792 demonstrates acceptable internal consistency for items associated with coastal and marine tourism, albeit marginally lower than that of other variables.

Marine Biotechnology
The Cronbach's alpha of 0.805 indicates a satisfactory level of internal consistency for items related to marine biotechnology, akin to findings in coastal and marine tourism.

Pollution Control and Waste Management
With a Cronbach's alpha of 0.828, this variable shows strong internal consistency, meaning that the items assessing waste management and pollution control create a reliable scale.

Marine Finance
The Cronbach's alpha of 0.829 indicates strong internal consistency for items pertaining to marine finance.

Confirmatory Factor Analysis
Confirmatory factor analysis (CFA) is a statistical method employed to validate the factor structure of a collection of observed data. Confirmatory Factor Analysis (CFA) enables the researcher to evaluate the hypothesis that a relationship exists between observed variables and their underlying latent constructs. The researcher uses theoretical knowledge, empirical research, or a combination of both, formulates the relationship pattern a priori, and subsequently tests the hypothesis statistically (Suhr, 2006).

(Table – 2 Fit Indices of Confirmatory Factor Analysis)

Fit Indices	Recommended	Observed	Result
CMIN/df (minimum discrepancy as indexed chi-square)	>5 Terrible, >3 Acceptable, >1 Excellent	1.831	Excellent
GFI	>0.80	0.877	Acceptable
CFI (Comparative Fit Index)	<0.90 Terrible, <0.95 Acceptable, >0.95 Excellent	0.973	Excellent
TLI (Tucker–Lewis index)	> 0.9	0.958	Excellent
PNFI (Parsimony-Adjusted Measures)	> 0.5	0.628	Acceptable
RMSEA (Root mean square error of approximation)	>0.08 Terrible, >0.06 Acceptable, >0.05 Excellent	.074	Acceptable

The CMIN/df value of 1.831 is categorized as "Excellent" (<3), suggesting a favorable model fit with minimal discrepancy between the model and the data. The GFI value of 0.877 surpasses the threshold of 0.80, categorizing it within the "Acceptable" range, indicating a satisfactory level of goodness of fit. The CFI value of 0.973 exceeds the threshold of 0.95, classifying it as "Excellent." This suggests that the model demonstrates a superior fit to the data relative to a baseline model. The TLI value of 0.958, exceeding 0.90, categorizes it within the "Excellent" range, signifying a robust fit while accounting for model complexity. Since it is more than 0.50, PNFI (0.628) is considered "Acceptable." It shows that there is a fair compromise between model simplicity and goodness of fit. The RMSEA value of 0.074 is considered "Acceptable" since it is in the range of 0.06 to 0.08. Based on this, it seems like the model is fairly close to the data.

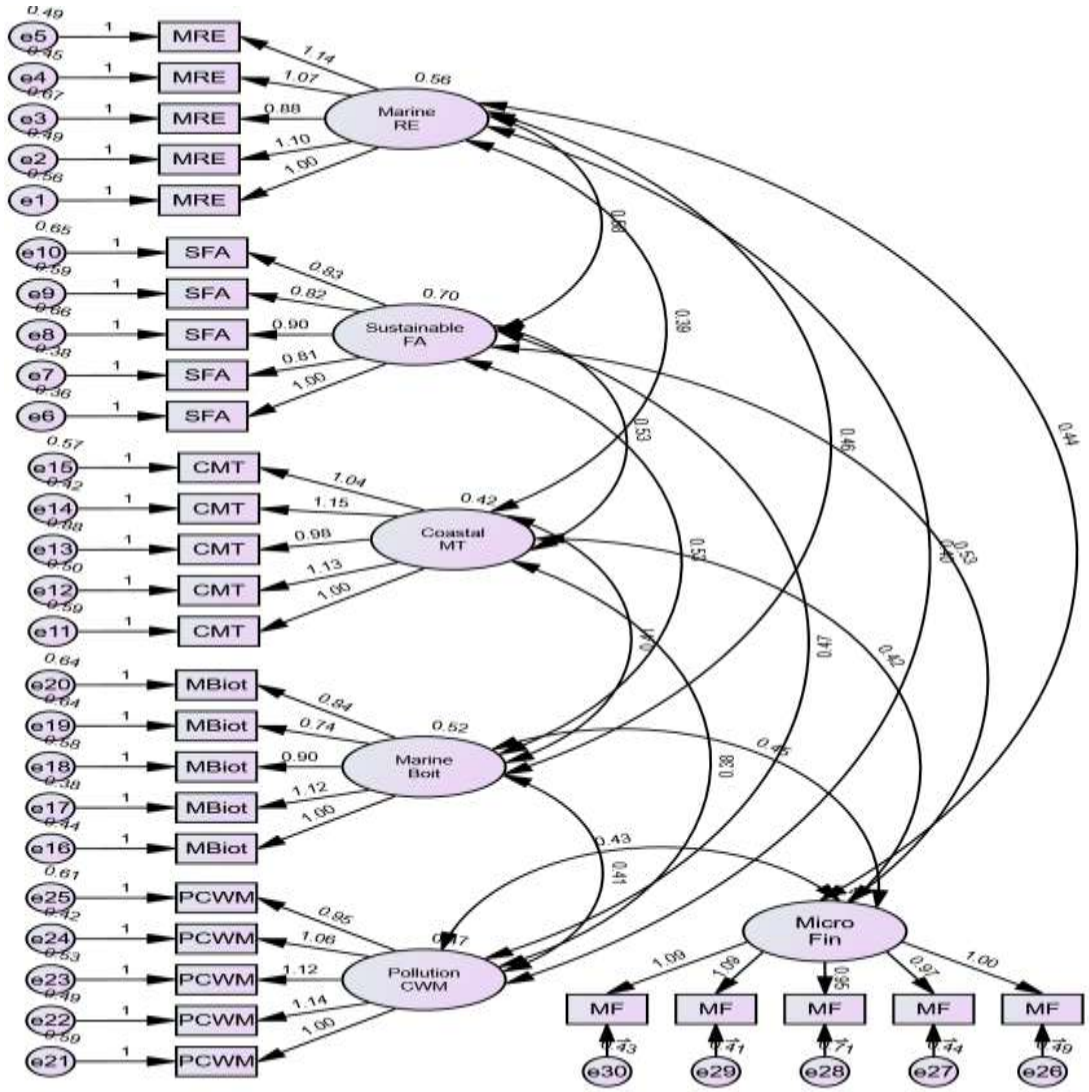


Figure -2 Confirmatory Factor Analysis

Structure Equation Model

Structural equation modeling is a type of methodology that attempts to describe hypotheses about the means, variances, and covariances of observable data in terms of a smaller number of 'structural' parameters determined by an underlying conceptual or theoretical model. Historically, structural equation modeling evolved from a fusion of two distinct statistical traditions. The first tradition is factor analysis, which originated in the sciences of psychology and psychometrics. The second tradition is simultaneous equation modeling, which originated in econometrics but has a history in genetics and was introduced to sociology as route analysis (Kaplan, 2001).

(Table – 3 Fit Indices of Structure Equation Modelling)

Fit Indices	Recommended	Observed	Result
CMIN/df (minimum discrepancy as indexed chi-square)	>5 Terrible, >3 Acceptable, >1 Excellent	1.244	Excellent
GFI	>0.80	0.826	Acceptable
CFI (Comparative Fit Index	<0.90 Terrible, <0.95 Acceptable, >0.95 Excellent	0.957	Excellent
TLI (Tucker–Lewis's index)	> 0.9	0918	Excellent
PNFI (Parsimony-Adjusted Measures)	> 0.5	0.620	Acceptable
RMSEA (Root mean square error of approximation)	>0.08 Terrible, >0.06 Acceptable, >0.05 Excellent	0.022	Excellent

A very good model fit with minimum conflict between the model and data is indicated by the observed value being in the "Excellent" range (<3), as indicated by CMIN/df (1.244). A GFI of 0.826 indicates a respectable degree of fit since it is higher than the cutoff value of 0.80, which puts it in the "Acceptable" range. CFI (0.957) being greater than 0.95, the observed value is considered "Excellent." This means the model outperforms the baseline model in terms of data fit. TLI (0.918) is in the "Excellent" range, indicating a well-balanced relationship between the complexity of the model and its goodness of fit, since it is larger than 0.90. When the PNFI score is more than 0.50, it is considered "Acceptable," meaning that the model strikes a good compromise between being overly simplistic and being too fitted. The RMSEA value of 0.022 is far below the significance level of 0.05, which is considered "Excellent." There is very little approximation error, suggesting an outstanding fit.

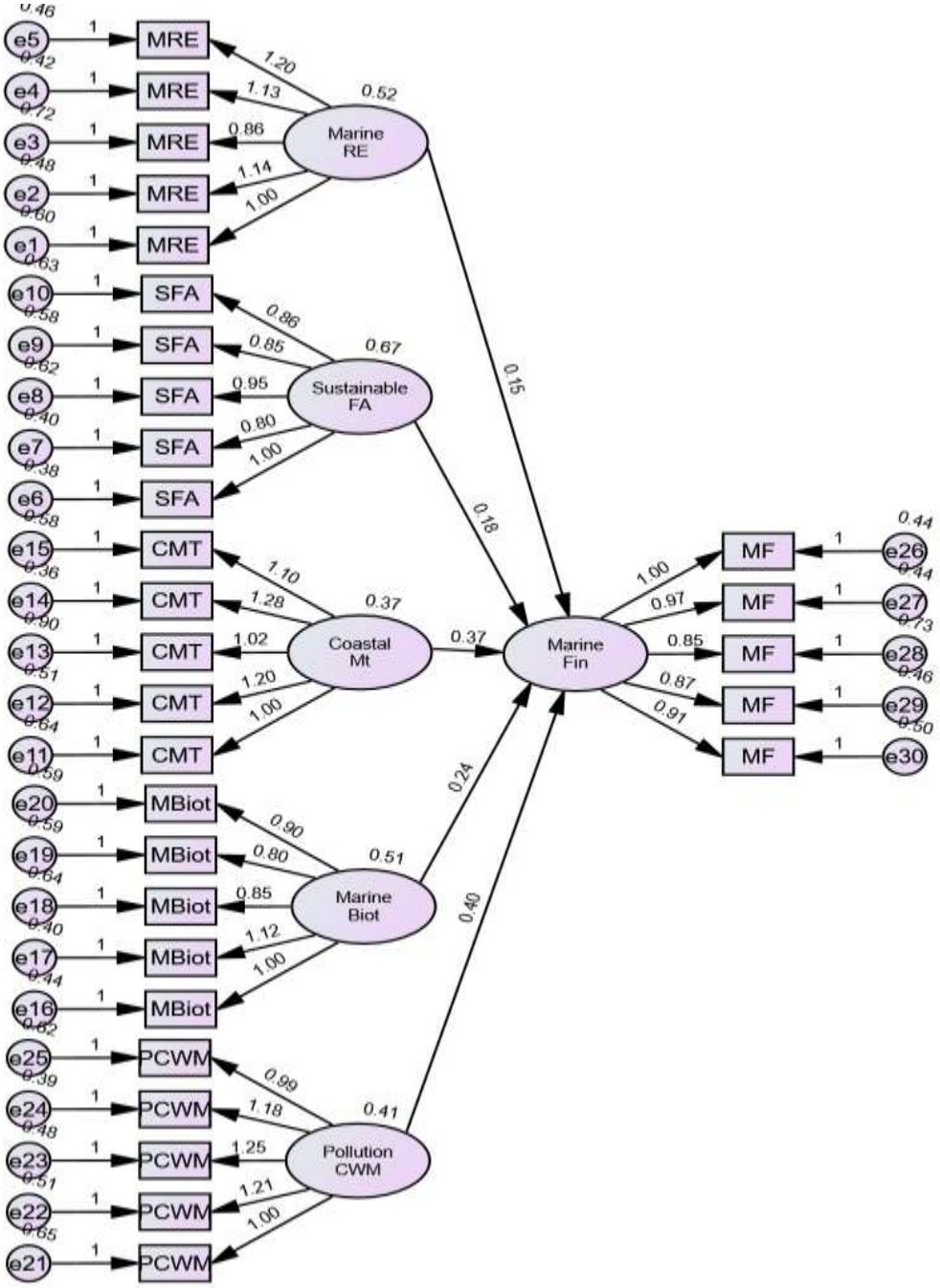


Figure -3 Structure Equation Modelling

Hypothesis Testing
(Table -4 Hypothesis Testing)

Hypothesis	P-Value	Result
H1: Marine Renewable Energy & Marine Finance	.003	Significant
H2: Sustainable Fisheries and Aquaculture & Marine Finance	.000	Highly Significant
H3: Coastal and Marine Tourism & Marine Finance	.000	Highly Significant
H4: Marine Biotechnology & Marine Finance	.000	Highly Significant
H5: Pollution Control and Waste Management & Marine Finance	.000	Highly Significant

Interpretation
The relationship between Marine Renewable Energy and Marine Finance (p = 0.003) is statistically significant, suggesting a meaningful association between the two variables. Other Hypotheses (p = 0.000): The hypotheses related to Sustainable Fisheries and Aquaculture, Coastal and Marine Tourism, Marine Biotechnology, and Pollution Control and Waste Management in conjunction with Marine Finance are of considerable importance. This indicates substantial evidence of relationships between these variable pairs.

CONCLUSION
The role of Marine Spatial Planning (MSP) in sustainable investment within India's Blue Economy is pivotal for ensuring balanced economic growth while safeguarding marine ecosystems. MSP provides a structured approach to managing marine resources, integrating ecological, economic, and social considerations into decision-making processes. By optimizing the use of marine space and resources, MSP can help reduce conflicts between industries, such as fisheries, shipping, and tourism, while promoting sustainable practices. In conclusion, Marine Spatial Planning is an essential tool for aligning sustainable development with economic growth in India's Blue Economy, creating a foundation for future investments that support both ecological integrity and social well-being.

FUTURE SCOPE
In India, where the coastal and marine environment plays a crucial role in supporting livelihoods and economic development, MSP can guide investments in a way that maximizes benefits while minimizing negative environmental impacts. Properly implemented, MSP can enhance the attractiveness of India's Blue Economy to both domestic and international investors by fostering long-term sustainability, improving governance, and ensuring equitable use of marine resources.

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